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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/552,360
Filing Date: June 16, 2006
Appellant(s): GIACOMETTI, CLAUDIO

Brian M. Duncan
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 02 February 2011 appealing from the Office action mailed 03 September 2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims Pending: 1, 2, 4-14, 19-24 and 35-38

Claims Rejected and on Appeal: 1, 2, 4-14, 19-24 and 35-38

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5,709,829	GIACOMETTI	1-1998
5,913,997	SCHULZ et al.	6-1999
5,874,159	CRUISE et al.	2-1999
5,704,101	MAJORS et al.	1-1998
WO 99/25911 A1	DETTMER et al.	5-1999
5,382,400	PIKE et al.	1-1995

It is noted that the examiner has relied on US 6,395,211, published in May 2002, as an English language equivalent of DETTMER. All references to DETTMER are to column and line numbers in the US patent.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 5, 19, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over GIACOMETTI in view of either one of SCHULZ or CRUISE.

GIACOMETTI teaches a method of producing a perforated web material wherein the web material is fed through a nip between a first roller 7 and a second roller 5 rotating in opposite directions and pressed against each other (Figure 1; column 2, lines 52-64), the first roller being provided with protuberances for perforation (column 1, lines 60-67). GIACOMETTI teaches that the first and second roller rotate with different peripheral speeds (column 1, lines 65-67). GIACOMETTI also shows that the web is introduced to the nip (i.e. to an entrance of the nip, a position adjacent the nip, or an area opposite the nip) between the rollers without first contacting either of the rollers (Figure 1). It is clear from the slipping action taught by GIACOMETTI that the protuberances contact the surface of the second roller without penetrating the surface of the second roller (column 2, lines 1-6 and lines 52-64; column 3, lines 12-21).

GIACOMETTI differs from claim 1 in that GIACOMETTI does not recite the claimed step of preheating. However, such a step of preheating prior to thermal treatment between opposed rolls is generally known in the art. For example, SCHULZ teaches preheating prior to thermomechanical treatment of a web in order to achieve very uniform treatment, provide increased flexibility in processing conditions at various line speeds and web materials, optimize the thermomechanical treatment, and to

provide precise temperature control prior to the thermomechanical treatment (column 2). SCHULZ also indicates that the thermomechanical treatment may include processing the preheated web material between heated rolls and preheating prior to contacting the rolls (column 3, lines 25-31; Figures 1 and 2). CRUISE teaches that preheating prior to calendering between rolls and before contacting the rolls allows an increase in manufacturing speed because the opposed rolls do not have to heat the fabric as much (column 5, lines 64-67; column 6, lines 1-8). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide GIACOMETTI with the claimed step of preheating because one of ordinary skill in the art would have been motivated to achieve any of the above noted benefits in accordance with the teachings of either one of SCHULZ or CRUISE.

The limitations of claims 5, 19, 23 and 24 are clearly satisfied by GIACOMETTI (column 2, lines 13-27).

Claims 2, 4 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over GIACOMETTI in view of either one of SCHULZ or CRUISE as applied to claims 1, 5, 19, 23 and 24 above, and further in view of MAJORS.

Regarding claim 2, GIACOMETTI teaches that at least one of the rollers is heated (column 2, lines 43-50). As to the height of the protuberances, it is clear that the protuberances must be of sufficient height to provide the desired perforation, but GIACOMETTI does not recite specific height values. However, values within the claimed range are generally known in the art of perforating web materials between a

roller having protuberances and an opposed roller. For example, MAJORS suggests height values of 0.25 to 1.1 mm (column 4, lines 34-37). In view of the range suggested by MAJORS, the examiner's position is that no more than routine experimentation is involved in selecting a suitable height within the claimed range to achieve the desired perforation. It would have been obvious to one of ordinary skill in the art at the time of the invention to select a protuberance height within the claimed range as a matter of routine experimentation to provide the desired perforation in view of the above noted teachings of MAJORS.

Regarding claim 4, the protuberance height limitations are satisfied for the reasons provided above. GIACOMETTI clearly suggests that the first roller rotates at a higher peripheral speed than the second roller (column 1, lines 60-67). While the examiner acknowledges that MAJORS is directed to rotating the first roller at a slower peripheral speed than the second roller (column 4, lines 44-47), MAJORS acknowledges the prior art method of providing the claimed relative speeds between the rollers. It is reasonably clear from the description in column 4 of MAJORS that the protuberance height values as suggested by MAJORS are typical of both the prior art process in which the first roller rotates at a higher peripheral speed than the second roller, i.e. the claimed speed relationship, as well as the method desired by MAJORS in which the opposite speed relationship is used. For example, at column 4, lines 22-43, MAJORS describes typical protuberance characteristics, and then at column 4, lines 44-47, MAJORS distinguishes the invention from the prior art by indicating a different speed relationship between the rollers is desired. It is again noted that the primary

reference to GIACOMETTI is clearly directed to the claimed relationship of peripheral speeds of the rollers. Moreover, GIACOMETTI teaches that the desired relationship provides particular benefits with respect to fluid flow properties of the perforated web (column 2, lines 1-12). MAJORS has only been cited here to show that protuberance heights within the claimed range are typical in the art of perforating between opposed rollers. For these reasons, the examiner's position is that one of ordinary skill in the art would have reasonably used protuberance heights as suggested by MAJORS in the process of GIACOMETTI.

Claim 38 is satisfied for the reasons provided above.

Claims 6 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over GIACOMETTI in view of either one of SCHULZ or CRUISE as applied to claims 1, 5, 19, 23 and 24 above, and further in view of DETTMER.

Regarding claim 6, GIACOMETTI does not recite that the web material is bonded prior to being fed into the nip. DETTMER teaches that pre-bonding prior to feeding a nonwoven web into a nip for providing apertures in the web is advantageous in that the fibers are held together and do not prematurely or individually come into contact with the embossing roller which produces perforations (column 2, lines 58-60; column 3, lines 12-15). As to providing a bonded nonwoven fabric by using the claimed steps of producing a web of fibers and bonding the fibers, such is a conventional method of forming a bonded nonwoven fabric. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed steps of producing and

bonding because one of ordinary skill in the art would have been motivated to achieve the above noted benefits taught by DETTMER when using a bonded web and one of ordinary skill in the art would have been motivated to provide such a bonded web by conventional methods known in the art.

The limitation of claim 10 is clearly taught by GIACOMETTI (column 1, lines and 65-67).

Regarding claims 12 and 13, GIACOMETTI indicates that the speed of the web material may be equal to the peripheral speed of the second roller (column 6, lines 20-23). GIACOMETTI further teaches that the peripheral speed of the first roller should be varied to suit the base material being used and may be as low as 10% higher than the second roller, corresponding to a feed speed of about 90% of the peripheral speed of the first roller (column 2, lines 52-64). Accordingly, the ranges suggested by GIACOMETTI appear to satisfy the claimed ranges. In any event, GIACOMETTI teaches varying the rate of slipping to achieve suitable results. In particular, GIACOMETTI seeks to provide perforations which promote liquid travel in a single direction (column 1, lines 41-47; column 2, lines 1-12). Thus it appears that no more than routine experimentation is involved in selecting the peripheral speed of the first roller to achieve the desired perforation characteristics. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the limitations of claims 12 and 13 because one of ordinary skill in the art would have been motivated to adjust the peripheral speed of the first roller to achieve the perforation characteristics

taught by GIACOMETTI as a matter of routine experimentation in view of the rate of slipping ranges taught by GIACOMETTI.

The limitations of claims 11 and 14 have been satisfied for the reasons provided above.

Claims 7-9, 20-22, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over GIACOMETTI in view of either one of SCHULZ or CRUISE, and further in view of DETTMER as applied to claims 6 and 10-14 above, and further in view of PIKE.

Regarding claim 7, while GIACOMETTI shows a web material being unwound from a roll, it is also old and well known in the art that in-line production of a nonwoven material is an alternative suitable method of providing the web material. For example, PIKE explains that web materials may be pre-formed and provided to a manufacturing process or they may be manufactured in-line using web formation and bonding stations (column 10, lines 36-57; Figure 1). One of ordinary skill in the art would have readily appreciated that the in-line method eliminates the steps of winding the web material and subsequently unwinding it to feed the web to a perforating station. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the limitation of claim 7 because one of ordinary skill in the art would have been motivated to provide the web material in any suitable known manner such as the well known in-line method evidenced by PIKE.

Regarding claims 8 and 9, PIKE suggests a heating and bonding station using a through-air system in order to provide suitable bonding as well as to provide a more lofty web (column 4, lines 34-48; column 8, lines 25-30). As set forth in the rejection of claims 6 and 10-14 above, DETTMER provides motivation to use a bonded web in a process of forming perforations in a web by feeding between rollers. Since DETTMER does not recite particular methods of bonding, one of ordinary skill in the art would have been motivated to look to the prior art for known methods of forming a bonded web. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the limitations of claims 8 and 9 because one of ordinary skill in the art would have been motivated to provide the bonded web suggested by DETTMER using suitable known methods as evidenced by PIKE, or because one of ordinary skill in the art would have been motivated to achieve the lofty characteristics in forming a bonded web by through-air bonding in accordance with the teachings of PIKE.

Regarding claim 20, PIKE recognizes that unbonded nonwoven webs may be combined and subsequently laminated (column 10, lines 36-57). Performing such lamination in a heating station, for example by point bonding or through-air bonding, is well known in the art. As noted above, the primary reference to GIACOMETTI suggests the use of composite nonwoven webs (column 2, lines 13-27). Further, as noted above, DETTMER suggests the use of a pre-bonded web prior to perforation between rollers in order to hold fibers together and prevent them from coming into contact with a roller surface prematurely. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the limitation of claim 20 because one of ordinary skill in

the art would have been motivated to provide a bonded web material to achieve the above noted advantages in accordance with the teachings of DETTMER using known suitable methods of providing such a bonded web in accordance with the teachings of PIKE and well known heated lamination methods for forming bonded nonwoven composite fabrics.

Regarding claim 21, PIKE recognizes that unbonded or pre-bonded nonwoven fabric webs may be combined and laminated (column 10, lines 36-57). As noted above, DETTMER suggests the use of a pre-bonded web prior to perforation between rollers in order to hold fibers together and prevent them from coming into contact with a roller surface prematurely. It is also generally well known in the art of processing nonwoven fabrics that such fabrics may be subjected to a relatively light thermal point bonding operation in order to provide the fabrics with sufficient integrity for subsequent processing. As noted above with respect to claim 19, GIACOMETTI clearly teaches combining nonwoven fabrics together in the perforating operation (column 2, lines 13-27). Furthermore, there is a very limited number of options when combining nonwoven webs, i.e. neither, one or both of the webs are pre-bonded. Accordingly, in view of PIKE's recognition that pre-bonded or unbonded webs may be combined, DETTMER's suggestion to use a pre-bonded web, and the generally well known use of thermal point bonding to provide nonwoven webs with integrity for further processing, the examiner's position is that no more than routine experimentation is required to select from such a limited number of possible options in order to suitably join and perforate the nonwoven fabrics as suggested by the primary reference to GIACOMETTI. It would have been

obvious to one of ordinary skill in the art at the time of the invention to provide the claimed forming, feeding and perforating steps of claim 21 because one of ordinary skill in the art would have been motivated to pre-bond the nonwoven webs suggested by GIACOMETTI in accordance with the above noted teachings of DETTMER, in order to provide the webs with integrity in accordance with well known methods, or as a matter of routine experimentation to achieve suitable lamination and perforation in view of the limited number of possible combinations and PIKE's teaching that either unbonded or pre-bonded nonwoven webs may be combined.

Regarding claim 22, PIKE suggests the use of bicomponent fibers in order to allow production of a lofty fabric useful in a absorbent articles as a liner material, and also to allow suitable bonding by a through-air method (column 9, lines 10-64; column 4, lines 34-47). The primary reference to GIACOMETTI is also directed to a liner material for absorbent articles (column 5, lines 40-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to use bicomponent fibers in the web material because one of ordinary skill in the art would have been motivated to achieve the above noted benefits in accordance with the teachings of PIKE.

Regarding claim 35, this claim requires preheating and at least partially melting first and second web materials. As noted above, PIKE recognizes that unbonded nonwoven webs may be combined and subsequently laminated (column 10, lines 36-57). Performing such lamination in a heating station, for example by point bonding or through-air bonding, is well known in the art. Such heated bonding inherently involves partially melting the first and second webs because such bonding involves melting of

fibers to bond the fibers to each other and to bond the webs together. When forming and heat bonding a web in-line as suggested by PIKE, the bonded web is thus preheated prior to the subsequent perforation taught by GIACOMETTI. As noted above, either one of SCHULZ or CRUISE suggests preheating the web of GIACOMETTI prior to GIACOMETTI's step of perforating. Thus one of ordinary skill in the art would have fed the heat bonded web formed in-line as suggested by PIKE to the perforating rollers of GIACOMETTI. Clearly, if the heat bonded web is too hot or too cold, steps of additional preheating or allowing the web to cool would be provided. Such is not precluded by the claims. The alternative would be to allow the bonded web to cool and then preheat again in accordance with either of SCHULZ or CRUISE. However, such would clearly be a waste of energy, as would have been readily apparent to one of ordinary skill in the art. In any event, preheating by heat bonding, cooling and subsequent preheating still satisfies the claims. For these reasons, the language directed to partial melting during preheating is considered to be satisfied by the application of PIKE to suggest in-line web formation and bonding as set forth above.

Claim 36 is satisfied for the reasons provided above.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over GIACOMETTI in view of either one of SCHULZ or CRUISE, and further in view of DETTMER and PIKE as applied to claims 7-9, 20-22, 35 and 36 above, and further in view of MAJORS.

The pressure limitation of claim 37 is clearly suggested by GIACOMETTI (column 2, lines 52-64). MAJORS is applied as above in the rejection of claims 2, 4 and 38 for suggesting a protuberance height within the claimed range.

(10) Response to Argument

Appellant argues that preheating the web material prior to contacting one or more rollers advantageously reduces the time required by the web material to be in contact with the perforation roller so that correct and accurate perforation of all of the web material is obtained. Appellant further argues that this advantageously allows feeding of the web material at a high speed, which significantly reduces the time it takes to perforate the web material. Appellant argues these features distinguish over the applied prior art. This argument is not found persuasive because the prior art applied by the examiner provides motivations for preheating a web material prior to thermomechanical treatment between rollers, including the motivation of increasing speed of the web material. For example, CRUISE teaches that preheating a web material prior to treatment between rollers at elevated temperature allows an increase in the speed of the manufacturing process because the rollers do not have to heat the web material from ambient temperature (column 5, lines 64-67; column 6, lines 1-8). SCHULZ was alternatively applied and teaches several advantages of preheating a web material prior to thermomechanical treatment between rollers. SCHULZ teaches that preheating improves uniformity of the thermomechanical treatment, provides the flexibility to allow operation at different speeds, allows optimization of the thermomechanical treatment,

and allows precise temperature regulation to adjust for different web materials (column 2, lines 43-67). For these reasons, the examiner maintains that either one of CRUISE or SCHULZ provides strong motivation to include a preheating step in the process of the primary reference to GIACOMETTI. As to benefits of preheating particular to perforating, the examiner acknowledges that SCHULZ and CRUISE do not disclose benefits particular to perforation. However, the fact that Appellant has discovered additional benefits of preheating cannot be the basis for patentability because such benefits naturally flow from the suggestion of either one of SCHULZ or CRUISE to provide preheating prior to thermomechanical treatment between rollers. It is further noted that the claims do not specify a particular web speed or a particular accuracy of perforation. Accordingly, the benefits which Appellant argues distinguish over the prior art are not recited in the claims, and therefore these arguments are also unpersuasive because they do not appear to be commensurate in scope with the claims.

It is noted that Appellant has not provided any objective evidence or specific argument that would suggest the benefits of preheating taught by either one of CRUISE or SCHULZ would not be applicable to the perforating process of GIACOMETTI.

Appellant argues that the heating of the web material prior to contact with one or more rollers allows the web material to be more easily perforated, significantly reducing the mechanical stress on the web material and providing other benefits particular to perforation. The examiner acknowledges that SCHULZ and CRUISE do not disclose these benefits particular to perforation. However, the fact that Appellant has discovered additional benefits of preheating cannot be the basis for patentability because such

benefits naturally flow from the suggestion of either one of SCHULZ or CRUISE to provide preheating prior to thermomechanical treatment between rollers.

Appellant argues that GIACOMETTI does not teach preheating and does not recognize any particular problems associated with perforation. The examiner acknowledges that the primary reference to GIACOMETTI does not teach preheating. However, as noted above, either one of SCHULZ or CRUISE has been applied to provide motivation for using a preheating step. Further, the fact that GIACOMETTI does not recognize advantages of such preheating would not have, in itself, deterred the person of ordinary skill in the art from improving upon the process of GIACOMETTI by including a preheating step to achieve the advantages suggested by either one of SCHULZ or CRUISE.

Appellant argues that SCHULZ and CRUISE disclose processes wherein it is essential that the rollers rotate at the same rotational speed, whereas the present invention and the teachings of GIACOMETTI require that the rollers rotate at different speeds. It is first noted that the examiner does not find any such explicit language directed to it being essential that the rollers rotate at the same speed in either one of SCHULZ or CRUISE. Further, SCHULZ is broadly directed to advantages in preheating prior to thermomechanical treatment of a web material (column 1, lines 33-36). Thus it is clear that SCHULZ is not limited to a specific type of thermomechanical treatment. While CRUISE suggests preheating prior to bonding between heated rollers, the teaching of CRUISE is clearly applicable to the primary reference to GIACOMETTI. In particular, CRUISE indicates that web speed may be increased by preheating because

the rollers do not have to do all the heating (column 5, lines 64-67). Such a benefit is clearly applicable to GIACOMETTI because GIACOMETTI also provides heating between opposed rollers. By preheating, the heating between rollers in GIACOMETTI could be reduced and one of ordinary skill in the art would expect that web speed may be increased in accordance with the teachings of CRUISE. It is further noted that SCHULZ and CRUISE have been applied in the alternative to satisfy the claimed preheating step.

Appellant argues that SCHULZ and CRUISE do not teach or suggest the combination of preheating a web material prior to the web material contacting a first roller and a second roller. The examiner respectfully disagrees with this argument. Figures 1 and 2 of SCHULZ clearly show preheating prior to such contacting. Figure 1 of CRUISE also shows preheating prior to contacting the rollers (see also column 5, lines 64-67; column 6, lines 1-8).

Appellant argues that SCHULZ and CRUISE are particularly directed to bonding and thus do not provide any teaching of benefits of preheating in combination with perforation. The examiner does not agree that SCHULZ is limited to bonding. As noted above, SCHULZ is broadly directed to advantages in preheating prior to thermomechanical treatment of a web material (column 1, lines 33-36). Thus it is clear that SCHULZ is not limited to a specific type of thermomechanical treatment. The argument against CRUISE is not persuasive for the reasons provided above in which the examiner explained why one of ordinary skill in the art would have expected to

achieve an increase in speed when adding a preheating step to GIACOMETTI, in accordance with the teachings of CRUISE.

With respect to claim 5, Appellant provides an additional argument that GIACOMETTI, SCHULZ and CRUISE do not provide any teaching or suggestion to use a nonwoven fabric as the web material. However, GIACOMETTI clearly teaches that the web material may be a nonwoven fabric (column 2, line 17). SCHULZ is also directed to the use of nonwoven fabrics (Abstract; column 1, lines 15-32). CRUISE is also directed to nonwoven fabrics (Abstract). The additional arguments with respect to claim 5 are similar to previous arguments and are not persuasive for the reasons provided above.

With respect to claim 19, Appellant provides an additional argument that the references as a whole do not teach or suggest perforating a preheated web material that includes two or more webs of fibers that are coupled and joined together as claimed. The examiner respectfully disagrees. GIACOMETTI clearly indicates that composites of two or more webs of fibers may be employed and that the perforating process also achieves firm sandwiching together of the layers (column 2, lines 19-27). The additional arguments with respect to claim 19 are similar to previous arguments and are not persuasive for the reasons provided above.

With respect to claim 23, Appellant provides an additional argument that the prior art as a whole does not teach that the web material includes a plastic film combined with a nonwoven fabric. The examiner respectfully disagrees. GIACOMETTI clearly indicates that the web material may include a plastic film combined with a nonwoven

fabric (column 2, lines 19-27). The additional arguments with respect to claim 23 are similar to previous arguments are not persuasive for the reasons provided above.

The arguments with respect to claim 24 are similar to previous arguments and are not persuasive for the reasons provided above.

With respect to claim 2, Appellant provides an additional argument that MAJORS does not provide any teaching or suggestion for preheating. In response, either one of SCHULZ or CRUISE was provided to show motivation for including a preheating step in GIACOMETTI. MAJORS was only applied to show that heights of the protuberances within the claimed ranges are known to be suitable in the art of perforating webs between heated rollers. Appellant has not provided any evidence as to why one of ordinary skill in the art would not have used known values for protuberance height in the process of GIACOMETTI.

With respect to claim 4, Appellant provides an additional argument that MAJORS is directed to providing the anvil roller with greater peripheral speed while GIACOMETTI is directed to providing the studded roller with greater peripheral speed. While the examiner does not dispute this argument, this issue has been addressed in the grounds of rejection applied above. The examiner has taken the position that it is reasonably clear from the description in column 4 of MAJORS that the protuberance height values as suggested by MAJORS are typical of both methods. Appellant has not provided any objective evidence or specific arguments to the contrary.

With respect to claim 38, Appellant provides an additional argument that preheating of the web material advantageously reduces the bending stresses induced

on the protuberances so that the height of the protuberances can be increased. In response, the claimed ranges of protuberance height include values which are known in the art for perforation, as evidenced by MAJORS. Accordingly, this argument is not commensurate in scope with the claims. Appellant further argues that the forces exerted on a web material during perforation are much greater than in the processes of SCHULZ or CRUISE. However the claims are not directed to a particular force, and the primary reference to GIACOMETTI is directed to perforating. Attorney arguments are not considered evidence, and even if this argument is accepted, there is no suggestion as to why one of ordinary skill in the art would not have expected to achieve at least some of the benefits noted above in either one of SCHULZ or CRUISE with respect to preheating. The additional arguments with respect to claim 38 are similar to previous arguments, and are unpersuasive for the reasons provided above.

The arguments with respect to claims 6, 10 and 11 are similar to previous arguments and are unpersuasive for the reasons provided above.

With regard to claim12, Appellant argues that the prior art as a whole fails to teach or suggest the claimed feed speed which is between 90% and 100% of a peripheral speed of the first roller with protuberances. Appellant further argues that GIACOMETTI does not provide any teaching or suggestion as to the relationship between the feed of the web and the cylinder with projections. The examiner respectfully disagrees. GIACOMETTI explicitly recites that the speed of the web may be equal to the peripheral speed of the second roller (column 6, lines 20-23). GIACOMETTI further teaches that the peripheral speed of the first roller should be

varied to suit the base material and may be as low as 10% higher than the second roller, corresponding to a feed speed of about 90% of the peripheral speed of the first roller (column 2, lines 52-64). Thus the ranges suggested by GIACOMETTI appear to satisfy the claimed ranges. The examiner has also taken an alternative position that one of ordinary skill in the art would have selected a rate of slipping which corresponds to the claimed range as a matter of routine experimentation to provide perforations which promote liquid travel in a single direction in accordance with the teachings of GIACOMETTI (see grounds of rejection above). Appellant has not provided any evidence or specific arguments of the contrary.

The arguments with respect to claim 13 are similar to previous arguments and are unpersuasive for the reasons provided above. With regard to DETTMER, it is noted that either one of SCHULZ or CRUISE was applied to provide motivation to include a preheating step in GIACOMETTI.

With regard to claim 14, Appellant argues that GIACOMETTI's teaching of a rate of slipping of 10%-50% does not suggest a speed of one roller being between 50% and 100% of another roller. The examiner respectfully disagrees. GIACOMETTI teaches that the first roller with protuberances moves at a faster rate than the second roller which acts as an anvil. GIACOMETTI teaches that the rate of slippage may be 10-50%, thus clearly indicating a difference in speed of about 10-50%. GIACOMETTI gives a specific example in which it is clear that the rate of slippage is in fact directly related to the relative peripheral speeds of the rollers (column 6, lines 16-26). A 10% rate of

slippage corresponds to the second roller having a peripheral speed about 90% that of the first roller.

With regard to claims 7 and 8, the examiner acknowledges that PIKE does not disclose perforation. PIKE was only applied here to provide evidence that it is old and well known in the art that in-line production of a nonwoven material is a suitable alternative to providing an already-manufactured nonwoven material from a roll. For example, PIKE explains that web materials may be pre-formed and provided to a manufacturing process or they may be manufactured in-line using web formation and bonding stations (column 10, lines 36-57; Figure 1).

With regard to claim 9, Appellant does not dispute that through-air bonding is generally known. As to preheating, either one of SCHULZ or CRUISE was applied to provide motivation for including a preheating step in GIACOMETTI.

The arguments with respect to claims 20, 21 and 22 are similar to previous arguments and are unpersuasive for the reasons provided above.

With regard to claim 35, Appellant argues SCHULZ is directed to preheating a single web. In response, the primary reference GIACOMETTI suggests the use of composite materials comprising two or more carded (nonwoven) webs. GIACOMETTI feeds such composite material to the rollers for perforating. To achieve the advantages of preheating in accordance with either one of SCHULZ or CRUISE, naturally such composite material would be preheated. CRUISE, alternatively applied, clearly suggests a composite web may be preheated (Figure 1). The additional arguments with

respect claim 35 are similar to previous arguments and are unpersuasive for the reasons provided above.

With regard to claim 36, Appellant argues PIKE does not teach perforation. In response, DETTMER was applied to suggest pre-bonding of GIACOMETTI's nonwoven web prior to perforation for the motivation of improving perforation by holding the fibers together and preventing the fibers from prematurely or individually coming into contact with the embossing roller which produces perforations (column 2, lines 58-60; column 3, lines 12-15). Since DETTMER does not recite particular methods of bonding, PIKE was applied to suggest through-air bonding as a generally well known suitable bonding method, or alternatively as a bonding method which PIKE teaches for achieving a lofty web. Accordingly, PIKE was not relied upon for perforation. The primary reference to GIACOMETTI provides perforation. PIKE was relied upon for suggesting a well known web bonding method. The motivation to bond the web prior to perforation was provided by DETTMER. The additional arguments regarding claim 36 are similar to previously provided arguments and are unpersuasive for the reasons provided above.

The arguments with regard to claim 37 are unpersuasive for the reasons provided above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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